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August 13, 1992

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FROM: Robert Farrell
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SUBJECT: Review PWT-RBT Site-PRC Draft Operation and Maintenance
Inspection Report and June 19, 1992 letter from David Newton

It would appear that PRC's sampling of the wells and landfill toe drain demonstrated what Newton was not able to demonstrate by the use of tracers; that is that the water being sampled in the perched aquifer monitoring wells has been in contact with the waste in the landfill. PRC, on page 11, states that "the results from the toe drain samples show excellent correlation" to the ground water samples (table 1). It is clear that the ground water in the monitoring wells is providing samples of water that has passed through the landfill. It would seem to prove the case that PWT has been attempting to demonstrate over the last two winter seasons that the water in the perched zone can provide samples representative of the water passing under the landfill.

The problem with the perched aquifer monitoring that appears to bother PRC the most is the inability of PWT to monitor the ground water in the wells on a quarterly bases. While it is agreed quarterly sampling is desirable under most conditions, it is not necessarily the best monitoring system for protecting the environment at this site. In the case of the RBT site, it is possible, by monitoring the perched aquifer wells, to detect and take corrective action if a release above the MCL occurs before the release has reached the regional aquifer at a depth of about 130 feet below the ground surface. During those portions of the year when there is not enough water available to form a perch water table, there is little water migrating through the landfill. It will only be during those times of the year that excess precipitation is available that contaminants can be leached out of the wastes. It is at these times that the perched aquifer is recharged. Sampling during these periods of time will be capable of determining if a significant release is occurring.

Newton's report recommends that the landfill toe drain and the landfill underdrain system be monitored frequently during the late fall, winter, and spring to determine if a release has occurred. This suggestion is agreed with. Some changes to the Newton report are suggested below.

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PRC recommends that the regional aquifer in the Troutdale Formation be monitored. If for no other reason than the large vertical distance between the base of the landfill and the regional aquifer, this recommendation is not agreed with. PRC's demonstration that the water in the perched zone has been in contact with the waste is sufficient to demonstrate monitoring the perched zone is practical and will provide early indication if a significant release is occurring.

RECOMMENDATIONS

It is recommended that the landfill toe drain, the landfill underdrain, and the perch water table wells be sampled when there is water available in them. A monitoring program should be developed that monitors the drains and wells to determine when there is sufficient water present to take water quality samples. In this monitoring program it is critically important to obtain water quality samples of the initial slug of water pushed through the waste at the beginning of the wet season. The initial charge of water pushed through the waste when there is no longer a water deficit in the waste has the largest potential for exceeding the water quality standards. Since the chemicals of concern are predominately semi-volatile compounds (table 1, PRC report), a warning system should be arranged that would not allow this initial slug of leachate to be discharged from either drains until a sample has been taken. An alarm system would prevent overflow of the sumps and give warning that there is sufficient water in these collection sumps to be sampled. Water flow totalizers should be placed on the discharge from the sumps. Annual comparisons should be made between the daily discharges from the sumps and precipitation on the landfill.

Frequent monitoring of water levels in the perched zone wells should be undertaken starting in October of each year. When there is sufficient water in any given well to take a water sample, the well should be sampled. The following water quality sampling events should then be spaced out over late fall, winter, and spring as sufficient water becomes available. There should be between 4 to 6 samples collected and tested from each monitoring point (wells and sumps). Such a program probably will result in water samples being taken on different dates throughout the year, but this will provide the earliest warning of a significant release if it should occur.